# **JAVA**

1. What is difference between path and ClassPath?
2. What is difference between JDK and JVM and JRE?
3. Java is fully object oriented or not.
4. how to stop reflection In java?

http://www.javaexperience.com/accessing-and-preventing-access-to-private-members-using-reflection/

1. Why java is better than other object oriented language.
2. Class A contains main method, B extends this class then what will happen?
3. What is difference between jar, war and ear?
4. What is Association, Aggregation, composition and generalization?
5. What is difference composition and inheritance?
6. Advantages of composition over inheritence?
7. Real time use of Java reflection API
8. What is dispatch binding?
9. Can we overload toString Method?
10. What is static in java?
11. How garbage collector decides this object are not in use and it should be collected?
12. Decorator design pattern disadvantages?
13. What is serialVersionUId?
14. Categories of design pattern in java?

http://www.allapplabs.com/java\_design\_patterns/java\_design\_patterns.htm

1. Can static variable can be serialized
2. Serialization and externalization in JAVA?
3. Class Lock and object lock?
4. Real time example of JAVA Reflection?
5. Overloaded method provide by java API?
6. What JVM contains which is not present in JRE?
7. Whan ArrayStoreException Comes?
8. how can we call super class method from subclass method?
9. for loop or for each loop which one is faster?
10. How to customize log4j?
11. Types of references in java.

http://java.dzone.com/articles/reference-types-java-part-1

1. class.forname and new operator difference or https://stackoverflows.wordpress.com/2012/03/03/why-load-a-jdbc-driver-using-class-forname-instead-of-new-operator/
2. Diff b\w Class.forName("com.mysql.jdbc.Driver") and

DriverManager.[**registerDriver**](http://docs.oracle.com/javase/7/docs/api/java/sql/DriverManager.html#registerDriver(java.sql.Driver))(con.mysql.jdbc.Driver);.

http://stackoverflow.com/questions/5484227/jdbc-class-forname-vs-drivermanager-registerdriver

1. Changes in java5, java6, java7.

<http://javarevisited.blogspot.in/2014/04/10-jdk-7-features-to-revisit-before-you.html>

http://www.withoutbook.com/DifferenceBetweenSubjects.php?subId1=7&subId2=43&d=Difference%20between%20Java%206%20and%20Java%207

28. Architecture of JVM and type of areas in JVM . flow how information stores in different areas.

<https://www.youtube.com/watch?v=dncpVFP1JeQ>

Q:- What is type of reference variable ?

Ex : A a=new A();

a is string ,float ,double ,char etc.

Q:-PrintStream.print() and String.valueOf() both method are same type input parameter but PrintStream.print(null) compile time error and String.valueOf(null); RuntimeException why ?

# **OOPS**

1. Real time Example of polymorphism.
2. Why overriding is called run time polymorphism?
3. Why overloading is called compile time polymorphism?
4. Why constructor can't be overridden?
5. Advantage and disadvantage of inheritance
6. What is Garbage Collector?
7. Why notify, notifyall, wait and synchronization put in object class?
8. abstraction n encapsulation difference with real time example?

# **STRING**

1. Why String class is immutable in java?
2. How to make Immutable class?

<https://www.facebook.com/AmanJavaProgramming/posts/201041616759462>

<http://stackoverflow.com/questions/18194139/make-immutable-java-object>

<https://docs.oracle.com/javase/tutorial/essential/concurrency/imstrat.html>

1. What is difference between String buffer and String builder and String?
2. Condition for immutable class?
3. What is difference between creation of object of String class using new

and without new keyword?

1. Write program:---

a. **palindrome**

**b. if character is shifted to left hand side ( one time one character)then how many**  **palindrome are possible ?**

**7.One line of string is given. all word are reverse and all character of word are reverse.**

1. Design pattern of String class?
2. Difference between parseInt and valueOf in java?

ParseInt return int premitive and valueOf returns Integer.

1. String s1=new String(“abc”); how many object wil be created?

http://stackoverflow.com/questions/9552218/how-many-string-objects-using-new-operator

1. Write a program to reverse a string using recursive algorithm
2. String str[]=new String[5];

str[0]=new String("pushpendra");

str[1]=new String("joni")?How many Object create in that case ?

.10. How to force jvm to create force object of string in string pool.

# **CLASSES**

1. If class A constructor call constructor of class B and vice versa than what will happen?
2. Types of inheritance?
3. Why abstract class have constructors in java?
4. can we make constructor as protected?
5. can we make abstract class constructor as protected?
6. - Why can’t you declare constructors synchronized ?

Ans:- The JVM ensures that only one thread can invoke a constructor call at a given point in time. But inside of constructor you can declare synchronized

# **INTERFACES**

1. What is Interface and why is it required in java?
2. Can we put class inside interface? What its significance?
3. Difference between interface and abstract class.
4. What is marker interface?
5. Interface A and Interface B both having same method as test1 if you implementing these interface in a subclass than what will happen.
6. Calling overloaded method of super class with null parameter?
7. How to prevent cloning of Singleton class?

# **EXCEPTION**

1. What is difference between exception and error?
2. Error can be handle or not?
3. What is NoclassDefFoundError and classDefNotFoundException?
4. What is throw, throws and finally?
5. What is difference between throw and assert.
6. What is difference between final, finally and finalize.
7. Try catch finally execution flow.
8. How JVM knows about the exception (whether it’s a runtime or compile time)?
9. Serializable and Externalizable.
10. How and when to create custom checked exception?

by default make your exception unchecked and you will find it whether it should be checked while writing client code. General guideline is to make an exception unchecked if the client code is not going to take any action other than logging.

Checkecd Exception----> extends Exception

Unchecked Exception---->Runtime Exception

Read more: <http://javarevisited.blogspot.com/2014/06/how-to-create-custom-exception-in-java.html#ixzz3XT4ycus9>

Ques: We can use throw or throws inside IIB and SIB's?

<http://stackoverflow.com/questions/2070293/why-doesnt-java-allow-to-throw-an-exception-from-static-initialization-block>

Because it is not possible to handle these exceptions in your source. You do not have any control over the initialization process and static{} blocks cannot be called from your source so that you could surround them with try-catch.

Instance initializers can throw checked exceptions, but if they do, the class constructor has to declare them

Example:

public class MyClass

{

PrintStream stream;

{

stream = new PrintStream("/tmp/file.txt");

}

public MyClass() throws FileNotFoundException { } }

Q 11- which exception is thrown in your project

Q:- What is exception in java?

Q: What is synchronous and asynchronous exceptions in java ?

Ans:- Asynchronous Exception:

1. Thread.stop() or ThreadGroup.stop() method invoke.
2. An internal error or resource limitation in the JVM.

instance of a subclass of VirtualMethodError.

http://howtodoinjava.com/2012/11/26/asynchronous-and-synchronous-exceptions-in-java/

Q:- you can use throw and throws inside static initialization or instance initializer.

Q: If not found appropriate catch clause in try-catch block then how to handle exception.

Ans:- default handler's uncaughtException method of ThreadGrourp is invoked.

thread does not have a specific [Thread.UncaughtExceptionHandler](http://docs.oracle.com/javase/7/docs/api/java/lang/Thread.UncaughtExceptionHandler.html) installed

# Design Pattern

1. Adapter Design Pattern ? When to use and its advantages?

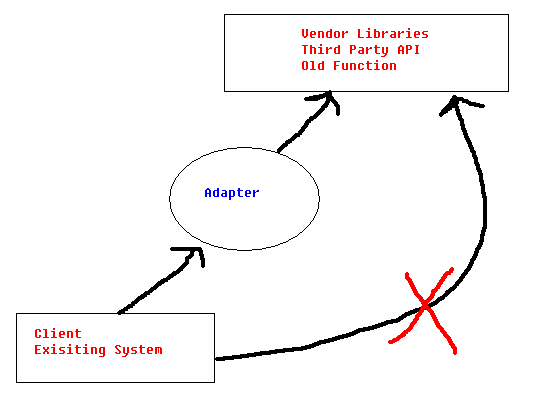
The Adapter pattern allows otherwise incompatible classes to work together by converting the interface of one class into an interface expected by the client

Case study from this website:-

<http://www.mkyong.com/design-pattern/adapter-design-pattern/>

Example from this website: <http://java.dzone.com/articles/design-patterns-uncovered-0>

**DISADVANTAGES**: Some say that the Adapter pattern is just a fix for a badly designed system, which didn't consider all possibilties. While this is a fair point, it is an important part of a pluggable architecture. It can also add a level of complexity to your code, making debugging more difficult.



1. Advantage and disadvantage of factory method pattern.

http://www.journaldev.com/1540/decorator-pattern-in-java-example-tutorial

# **THREAD**

1. How to achieve synchronization without using synchronized keyword?

No need for synchronization at all if you don't have mutable state.

No need for synchronization if the mutable state is confined to a single thread. This can be done by using local variables or [java.lang.ThreadLocal](http://docs.oracle.com/javase/7/docs/api/java/lang/ThreadLocal.html).

http://javarevisited.blogspot.in/2012/05/how-to-use-threadlocal-in-java-benefits.html

1. How many ways you create Thread?
2. Memory management in JVM.
3. How to check how many threads are alive ?

Thread.activeCount()

http://stackoverflow.com/questions/11536938/how-to-check-the-number-of-currently-running-threads-in-java

1. Which way is better Runnable and Thread?

When you extends Thread class, each of your thread creates unique object and associate with it. When you implements Runnable, it shares the same object to multiple threads.

1. What is inter-thread Communication?
2. What is synchronization?
3. What is thread life cycle?
4. How JVM stores locks(Ex. class lock or Object lock)?
5. What is deadlock in thread?
6. Can we call two time Start method? Or class level and object level locking?
7. Class Lock and object lock?
8. What is the difference between synchronized and static synchronized?
9. Yield, sleep and join?
10. Exact use of thread class sleep method?
11. Thread class join method?
12. If executing thread caught by an exception then what will happen?
13. What is the difference between synchronized and static synchronized?
14. Advantages of concurrentCollection over synchronized collection?

The one feature offered by the synchronized Map implementations but not by ConcurrentHashMap is the ability to lock the map for exclusive access.With Hashtable and synchronizedMap, acquiring the Map lock prevents any other thread from accessing it. This might be necessary in unusual cases such as adding several mappings atomically, or iterating the  
Map several times and needing to see the same elements in the same order.On the whole, though, this is a reasonable tradeoff concurrent collections should be expected to change their contents continuously.

PAGE 51: concurrency in practice(Problems with synchronized collections)

(JAVA CONCURRENCY PAGE 71)

1. Reterrrent Lock
2. In a recurring syncyronized function what will happen?DeadLock or it will execute correctly?

Nothing will happen programme will execute correctly

**public** **class** Carclient

{

**public** **static** **synchronized** **int** myRecursiveMethod (**int** aVariable)

{

System.*out*.println(aVariable);

aVariable--;

**if** (aVariable == 0)

**return** 0;

**return** *myRecursiveMethod*(aVariable);

}

**public** **static** **void** main(String[] args) {

Carclient.*myRecursiveMethod*(20);

}

}

1. Interthread Communication?

<http://www.dineshonjava.com/2013/05/inter-thread-communication-is-one-of.html#.VOcDCy5EmWk>

1. Volatile and static volatile?

http://stackoverflow.com/questions/2423622/volatile-vs-static-in-java

1. how can we read large file using multiple thread efficiently?
2. How to achieve synchronization without synchronized keyword?

http://tutorials.jenkov.com/java-concurrency/threadlocal.html#creating-a-threadlocal

1. race condition in java?
2. **write a code to solve producer consumer problem?**
3. **Cyclic Barrier?**

Given the nature of CyclicBarrier it can be very handy to implement map reduce kind of task similar to [fork-join framework of Java 7](http://javarevisited.blogspot.sg/2011/09/fork-join-task-java7-tutorial.html), where a big task is broker down into smaller pieces and to complete the task you need output from individual small task e.g. to count population of India you can have 4 threads which counts population from North, South, East and West and once complete they can wait for each other, When last thread completed there task, Main thread or any other thread can add result from each zone and print total population. You can use CyclicBarrier in Java :

1) To implement multi player game which can not begin until all player has joined.

2) Perform lengthy calculation by breaking it into smaller individual tasks, In general to implement Map reduce technique.

Read more: <http://javarevisited.blogspot.com/2012/07/cyclicbarrier-example-java-5-concurrency-tutorial.html#ixzz3Xek63BUQ>

What difference between Lock and Synchronization and what is better to apply with threading?

# **OBJECT**

1. No of method in object class and name?
2. What is difference between comparable and comparator?
3. Why serialization is important we have a database?

# **COLLECTION**

1. What is difference between Array and ArrayList?
2. What is difference between iterator and enumerator?
3. What is difference between iterator and ListIterator?
4. What is difference between vector and ArrayList?
5. What is difference between ArrayList and LinkedList and in which scenario we will use ArrayList and LinkedList?
6. Sorting in ArrayList and reverse sorting in ArrayList.
7. Which interface is used by almost all collection?
8. Can we make ArrayList & HashMap final? Can we add element after being final?
9. What is difference between HashMap and HashTable?
10. How to iterate HashMap?
11. What is HashSet?
12. What is Serialization and Deserialization?
13. When we make serialize any abject why we save it in file system not in databases?
14. What is difference collection and collections?
15. What is difference comparator and comparable?
16. What’s ArrayList’s initial capacity? How to prove programmatically?
17. ConcurrentModification Exception?
18. Diff between EntrySet and KeySet?
19. When to override toString, equals and HashCode method?
20. How HashMap works internally in java?

http://howtodoinjava.com/2012/10/09/how-hashmap-works-in-java/

1. What will happen if two different objects have same HashCode?
2. Two different objects have same HashCode then how you will retrieve value object?
3. How to decide which collection to use?
4. What is race condition in hashmap and how to prevent it?

http://pankblogs.blogspot.in/2012/09/hashmap-in-java.html

1. race condition in Hashmap?
2. Can we make Arraylist final?
3. How make sure adding custom object as key are not duplicates in hashmap? Ans: use hashcode and equals.
4. Which data structure will make sure order of insertion and order of fetching
5. How to get factorial using recursion
6. Collision in hashTable?
7. How hashset oand treeset works?

http://javahungry.blogspot.com/2013/08/how-sets-are-implemented-internally-in.html

1. Reversing string using recursion
2. Stack and queue using java.
3. Java Blocking and priority queue.
4. How to create Custom Iterator?
5. Reterrant lock

### [How to iterate hashmap in reverse order in Java](http://stackoverflow.com/questions/10596132/how-to-iterate-hashmap-in-reverse-order-in-java)

1. How to remove duplicate values in HahsMap what.

http://stackoverflow.com/questions/17812454/remove-duplicate-values-from-hashmap-in-java

1. How to implements iterator in any class(Employee)?
2. Create custom Iterator?

http://blog.dreasgrech.com/2010/03/javas-iterators-and-iterables.html

1. How to create Custom Hashmap ?

http://www.javamadesoeasy.com/2015/02/hashmap-custom-implementation.html

Note : Collection is extends Iterable Interface in java.

**DATA Structure And Algorithm**

1. QuickeSort: <https://www.youtube.com/watch?v=3DV8GO9g7B4>
2. MergeSort:<https://www.youtube.com/watch?v=sfmaf4QpVTw&index=8&list=PLEbnTDJUr_IeHYw_sfBOJ6gk5pie0yP-0>
3. Define B Tree,B+ Tree,AVL Tree.

SPRING

1. **Which dependecy injection technique is best?**

We usually advise people to use constructor injection for all mandatory collaborators and setter injection for all other properties. Again, constructor injection ensures all mandatory properties have been satisfied, and it is simply not possible to instantiate an object in an invalid state (not having passed its collaborators). In other words, when using constructor injection you do not have to use a dedicated mechanism to ensure required properties are set (other than normal Java mechanisms).

<http://stackoverflow.com/questions/11432174/spring-setter-injection-and-constructor-injection>

1. Spring Default injection technique?
2. Cyclic Dependency in Spring?

http://gal-levinsky.blogspot.in/2012/04/judgement-day-weapon-for-circular.html

1. Q:-1.diff b\w lazy-init=”true” with scope=”singleton” and lazy-init=”false” with scope=”singleton”.

2.diff b\w lazy-init=”true” with scope=”prototype” and lazy-init=”false” with scope=”prototype”.

Ans:-1- if lazy-init=”true” use lazy lazy-init=”false” then eager(why-use singleton pool)

2. both lazy ( why-create new bean for ever request.)

1. **pls check same class static or diff class static or non static factory method for bean initialize. And check limitations of all method**
2. **Depends-On in Spring?**

http://stackoverflow.com/questions/12663491/ref-vs-depends-on-attributes-in-spring

1. **How to create custom bean scope?**

<http://www.programmingforliving.com/2012/10/how-to-write-custom-> bean-scope-in-spring.html

1. Dependency type of bean.

Ans:- primitive Object and Collection, Wrapper, String

1. class A{

public A(int a){S.O.P(a);

}

Public A(String name){

S.O.P(name);

}

}

1. **How to inject dependencies of prototype bean into singleton bean?**

<https://joychakravarty.wordpress.com/spring/singleton-beans-with-prototype-bean-dependencies/>

<http://dmitrykrivenko.blogspot.in/2013/08/spring-singleton-beans-with-prototype.html>

10 what is qualifier in spring.

http://www.tutorialspoint.com/spring/spring\_qualifier\_annotation.htm

11 diff b\w spring 3.0 and spring 3.5

12.How the annotation internally works in spring.

13. How to do localization and globalization in Spring framework?

14.Exception mechainism in spring?

Spring MVC

1. **what is ContextLoaderListener and role of ContextLoaderListener ?**

Bootstrap listener to start up and shut down Spring's root [WebApplicationContext](http://docs.spring.io/autorepo/docs/spring-framework/3.0.x/api/org/springframework/web/context/WebApplicationContext.html). Simply delegates to [ContextLoader](http://docs.spring.io/autorepo/docs/spring-framework/3.0.x/api/org/springframework/web/context/ContextLoader.html) as well as to [ContextCleanupListener](http://docs.spring.io/autorepo/docs/spring-framework/3.0.x/api/org/springframework/web/context/ContextCleanupListener.html).

1. **how many applicationContext and webApplicationCotext add per ContextLoaderListener and DispatcherServlet respectively.**

ANs: both one or more then one

1. how to access applicationContext and webAppliactionContext from class path.

<context-param>

<param-name>contextConfigLocation</param-name>

<param-value>classpath:applicationContext.xml,other appliactionContext.xml</param-value>

</context-param>

**webApplicationContext Servlet specific**

<init-param>

<param-name>contextConfigLocation</param-name>

<param-value>classpath:test-servlet.xml,other webAppliactionContext.xml</param-value>

</init-param>

</servlet>

1. Default implementation of WebApplicationContext.

Ans: XmlWebApplicationContext

1. diff b\w View and ViewResolver .
2. If view name not specified the how to resolve view.

Ans:-using [DefaultRequestToViewNameTranslator](http://docs.spring.io/spring/docs/current/javadoc-api/org/springframework/web/servlet/view/DefaultRequestToViewNameTranslator.html)

1. what type of return and parameter of controller method.
2. if you use HandlerInterceptor for validation but validation is fail then what happen.
3. How to create response for try again for client.
4. how to customize url mapping Ans:- **SimpleUrlHandlerMapping**
5. default autowiring in spring framework? NO wiring
6. how to know request is coming from same client in spring
7. diff between bean id and bean name?

<http://ygravikiran.blogspot.in/2012/12/difference-between-id-and-name-in.html>

1. **Loaction of applicationContext and webApplicationContext in project.**

default location under WEB-INF or

under src (classpath) or

default DispatcherServlet.properties in the package org.springframework.web.servlet only for webApplicationContext.

# HIBERNATE

1. **Session.save and session.persist?**

Ans: Persist doesn’t triggr insert qurey immediately. Save does

.save return type is serializable

persist return type void

1. **Cascade and inverse difference?**

# <http://javaforloop.com/hibernate/hibernate-cascade-inverse-example-none-save-update-delete-delete-orphan/>

1. **When HibernateLazyInitializationException comes?**

http://javarevisited.blogspot.in/2014/04/orghibernatelazyinitializationException-Could-not-initialize-proxy-no-session-hibernate-java.html

1. **Hibernate Load and get method difference?**
2. **Session.merge and session.update?**

http://www.java4s.com/hibernate/difference-between-merge-and-update-methods-in-hibernate/

1. **Hibernate Sorted and ordered collection?**

<http://malliktalksjava.in/2013/02/24/difference-between-sorted-and-ordered-collection-in-hibernate/>

http://stackoverflow.com/questions/19871765/jpa-hibernate-sorted-collection-orderby-vs-sort

1. **Hibernate Fetching strategies?**

a. fetch-”join” = Disable the lazy loading, always load all the collections and entities.  
 b. fetch-”select” (default) = Lazy load all the collections and entities.  
 c. batch-size=”N” = Fetching up to ‘N’ collections or entities, \*Not record\*.  
 d. fetch-”subselect” = Group its collection into a sub select statement.

http://www.mkyong.com/hibernate/hibernate-fetching-strategies-examples/

1. **Hibernate Isolation levels?**
2. **Difference between bag and list?**
3. **What is proxy in hibernate?**
4. **Hibernate polymorphic mapping?**
5. **HibernateJoin?**<http://levelup.lishman.com/hibernate/hql/joins.php>
6. **Interact with Multiple dataBases in hibernate?**
7. **Different thread updating same row at same time, then what will happen and how to resolve if any exception comes? And: versioning i.e. optimistic locking**

# <http://www.techfaq360.com/tutorial/versioncheck.jsp>

# <http://www.java4s.com/hibernate/hibernate-versioning-example-hibernate-versioning-of-objects/>

1. **can we map a table with key in hibernate?**

No we cannot In case of hibernate if it a mapping file then xml will be validated against dtd. While running will get an exception. must specify an identifier type: com.salman.pojo.Person(if mapping of person class without id tag in cfg.xml)

1. **criteria and detached criteria?**
2. **How to reattach , detached object in a session again?**
3. **HQl query to select all address of person?**
4. **How to write join query in hibernate?**
5. **Pagination in Hibernate?**
6. **Advnatges of second level cache over first level**
7. Write mapping for n+1 problem and how to identify n+1 problem in hibernate.

1. **What is non recoverable exception in hibernate.**

**or**

**which method throw non recoverable exception in hibernate.**

**ex:- A a=(A)session.get(A.class,100); if Object not found in data base.**

**if(a==null){**

**code for recover...**

**}**

**A a=(A)session.load(A.class,100); if Object if not found in database.**

**if(a==null){**

**not recover ...**

**}**

**22.Define the** scenario of generated sql query from hibernate in association mapping.

Q Role of Session.evict() in hibernate.

Ques: Hibernate Collection mappings?

Program

1. Write a program for compare value of one array to another array in single loop.
2. class A{

public void a(){

System.out.println("hello from a() of A class..");

}

public static void b(){

System.out.println("hello from static b() of A class.. ");   
public void c(){

a();

b();

}

}

class B extends A{

public void a(){

System.out.println("hello from a() of B class..");

}

public static void b(){

System.out.println("hello from static b() of B class.. ");

}

}

class Test{

m.s.v.m(String ...srr){

new B().c();

}

}

output ?

Q: String str[]=new String[5];

str[0]=new String("pushpendra");

str[1]=new String("joni");

How many Object create in that case ?

Ques: How find missing element in Array of 1 to 100?

SQL

We have left outer join then why we need right outer join in sql.?

Q:-output...

String s="joni";  
String p="jo";  
String q=p+"ni";  
String r="j"+"o"+"n"+"i";  
System.out.println(s==p+"ni");  
System.out.println(s==(p+"ni").intern());  
System.out.println(s==q);  
System.out.println(s==r);

Ans:-1 constant expressions computed at compile time and internally use String.intern() method.

2 concatenation compute at rum time and create new String.

Q:- int a[]={5,6,7,8};

How many object create in this case ?

Q:- Class B{}

Class A{

B b[]=new B[3];

Object o=(Object)b;

Serializable s=(Serializable)b;

Cloneable c=(Cloneable)b;

}

Code compile or not.

Run time Exception

Q:- Class A{

Class B{

Static int i=10; // code compile or Run time Exception.

}

}

Note:- 1. Interface never inner.

2. Inner class may not declare static initializers

3.Inner and local class may not deaclare static method.

4. access modifier default apply on local class